The impact of gender and disability on the economic well-being of disabled women in the UK: a longitudinal study between 2009-2014*

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Abstract

The present study examined the economic well-being of disabled and nondisabled men and women in the United Kingdom (UK). Using the 2009-14 Life Opportunities Survey (N= 6,159 adults), the study is the first longitudinal study to empirically compare the economic well-being of disabled women in contrast to disabled men and nondisabled men and women. Hierarchical linear modelling and hierarchical linear logistic modeling were used to estimate the longitudinal changes. Findings indicate that, overall, disabled women's economic well-being improved significantly between 2009-2014 even after controlling for other demographic characteristics. However, the improvements were not substantial enough to significantly narrow the economic disparities between disabled women and disabled men, and nondisabled men and women. Disabled women remained worse off than disabled men and nondisabled men and women in 2014 as they did in 2009. The findings indicate that intersectional discrimination against disabled women exist in the UK. Findings from this study provide empirical evidence to support policies that enhance the economic security of disabled women.

Keywords: disabled women, economic well-being, intersectional discrimination, United Kingdom

Introduction

In 2016, approximately 13.3 million individuals, or one in five, had a disability in the United Kingdom (Department for Work and Pensions [DWP], 2017). Poverty among disabled people is high in the UK. In 2016, 30% of households that include a disabled person lived in poverty, compared to 19% of households without a disabled person (Disability Right, 2016). As in other developed countries, social and institutional barriers deprive disabled people in the UK from accessing essential economic resources and opportunities.

In the UK, there are more disabled women than men (DWP, 2017). In 2016, there were 7.4 million disabled women (23% of the general population) and 6.0 million disabled men (19%), which has remained broadly stable over time (DWP, 2017). Disabled women are more vulnerable to economic marginalization than disabled men (Barnes & Mercer, 2003). Although economic hardship affects women disproportionately as it is, disabled women may face further economic marginalization based on both their gender and their disability identity in contrast to both disabled men and nondisabled women. Hereinafter, we refer to this as "intersectional discrimination" – used in this study to specifically explain the interacting effect of disability and gender on disabled women's economic well-being. The study acknowledges that "intersectional discrimination" against disabled women in other areas such as education, employment and politics may also exist.

A number of studies indicate that disabled women are less likely to work in paid employment and earn less from paid work compared to disabled men and nondisabled

women (Leonard Cheshire Disability, 2014). Despite the large number of disabled women and their likelihood of living in poverty, there is a paucity of research on the economic well-being of disabled women in the UK. To our knowledge, there has not been any research that has empirically examined the significance and magnitude of intersectional discrimination experienced by disabled women in comparison to disabled men and nondisabled women on a national scale.

The purpose of this study is to address this research gap and examine how the intersection of disability and gender affect the financial and material well-being of disabled women in the UK. Using the 2009-14 Life Opportunities Survey, the study compared the economic well-being of disabled and nondisabled men and women longitudinally. The study examined the economic well-being of disabled women between 2009-14, and how they fared compared to disabled men and nondisabled men and women. Findings from this study can inform policy makers interested in ensuring the well-being of disabled women and provide empirical evidence to support policies that enhance the economic security of disabled women.

Background

Defining Disability

Defining disability is complex. The traditional medical model viewed disability as a deficit that required a cure or medical intervention (Oliver, 2013). In this view, disability was a characteristic of an individual. The medical model focused on the individual's limitations and ways to reduce those impairments by biomedical assistance and intervention (Donoghue, 2003). Hence, according to the medical

model, disability is seen as an undesirable trait and people with disabilities are often pitied. On the other hand, the social model viewed disability from a minority identity context. This view contended that disability was a social outcome characterized by discrimination and oppression rather than an inherent inferiority or the possession of an undesirable trait (Thomas, 2006). Disability in the social model was a consequence of historical, material and social conditions, rather than individual problems or medical conditions (Oliver, 2013). In the social model, people with impairments were "disabled" by society that excluded them from the mainstream (Oliver, 2013). Hence, proponents of the social model stressed the importance of removing barriers that restricted people living with impairments from integrating into mainstream society. Over the past years, the contemporary disability discourse in the UK has shifted towards the social model of disability (Thomas, 2006). In this study, based on the social model, we employed the language "disabled people" instead of "people with disabilities," to reflect this social model approach.

UK Disability Benefits and Policy Trends

There is a range of financial support for disabled adults in the UK. The Personal Independence Payment (PIP), introduced by the 2012 Welfare Reform Act, is over time replacing the Disability Living Allowance, which was previously the primary disability-costs related benefit for disabled adults below pension age. The PIP is a financial assistance of £22~£145 per week provided to those between the ages of 16 and 64 years and who have long-term illnesses or disabilities and need help with activities of daily living (DWP, 2018a). Claimants are required to periodically take an

assessment to determine their condition and benefit rates. Unlike the Supplemental Security Income program in the United States, the PIP in the UK is neither income nor asset tested (DWP, 2018a). In addition, disabled people 65 years of age or older in the UK can receive an Attendance Allowance, which supports personal care or assistance (DWP, 2018b). To be eligible, a recipient's condition must be severe enough to require assistance or supervision for safety. This program provides direct financial assistance of approximately £57~£85 per week. Also, the Carer's Allowance (£64 per week) is available to those who provide care for more than 35 hours a week (DWP, 2018b). Disabled adults not in work may apply for the Employment and Support Allowance (ESA). As of 2018, the ESA provides direct financial assistance of either £73 (work-related group) or £111 (support group) per week based on the Work Capability Assessment (DWP, 2018c). ESA claimants are placed either in the work-related activity group or support group depending on the severity of their impairment and expectation to work in the future. Work-related activity groups must go to regular interviews with an adviser who can help with improving their job skills and goals. In contrast, support group claimants do not have to go to interviews but will be asked to talk to a personal adviser. To become a support group member, the claimant must have an illness or disability which severely limits his or her activity.

In 2014, the UK government spent approximately £13.5 billion (i.e. 0.8% of national income) on disability benefits (Banks, Blundell, & Emmerson, 2015) and 2.3 million people received at least one disability benefit in the UK (Lloyd & Ross, 2014). Notably, this number represents fewer than one-fifth of the 12 million disabled

people living in the UK (DWP, 2017). Since the late 1990s, there has been ongoing policy rhetoric in the UK against fraudulent disability claimants, which intensified under the Conservative/Liberal Coalition Government that came into power in 2010 and the Conservative Government that followed in 2015 (Roulstone, 2015). There have been growing public and political sentiments that generous government benefits and open eligibility fostered welfare dependence (Roulstone, 2015). Over the last few years, the UK government has proposed a series of cuts to its disability benefits. The 2012 Welfare Reform Act led to significant disability benefit changes. The PIP was introduced under this Act, replacing the Disability Living Allowance and implementing more stringent eligibility criteria (Russell, 2013). Gulliford (2013) estimated that 600,000 fewer people will be eligible under the PIP by 2018 than those receiving Disability Living Allowance benefits (Gulliford, 2013). In October 2015, cuts were also made in the Access to Work schemes, which provide advice and practical support for work-related obstacles for the disabled population (i.e. alteration to premises or working environments). Under the cuts, a cap of £40,800 was introduced for all new claimants; existing claimants were capped beginning in April 2018 (DWP, 2018d).

Such changes are expected to hit disabled women harder than disabled men (Engender 2012; Women's Budget Group, 2013). Disabled women constitute a slight majority of Disability Living Allowance claimants, and thus the risk of change is likely to impact women claimants more than their male counterparts (Women's Equality Network Wales, 2013). Also, disabled women are more likely to face

discrimination and barriers at work than disabled men (World Health Organization, 2011), and thus, the measures to limit spending on the Access to Work scheme is expected to impact disabled women more than disabled men.

Disability and Economic hardship

Numerous studies indicate that disabled people are economically disadvantaged because of institutional, environmental and/or attitudinal discrimination they face (Yeo& Moore, 2003). According to Palmer (2011), disabled people have a higher likelihood of experiencing poverty than non-disabled people because: 1) disabled people have lowered earning capacity (i.e., less job opportunities and lower education); 2) disability expenses create a drain on resources (i.e., extra costs for necessary services such as therapies, transportation, and care); and 3) the demands associated with caregiving detract from the labor capabilities of other household members.

According to a UK study, having a disabled person in the household increased the risk of household poverty from 17% to 31% (McKay & Atkinson, 2007). Also, disabled people living in the UK paid an average of £550 per month for disability-related expenses and, as a result, were twice as likely to have unsecured debt totaling more than half of their household income compared to nondisabled people (Papworth Trust, 2018). Studies also indicate that disabled people are often under-employed and paid less than nondisabled people, which hinders their economic independence and stability (Papworth Trust, 2018). In 2017, the employment rate among the UK's working-age disabled people was half that of nondisabled people (Papworth Trust,

2018), and the proportion of disabled employees in low paying jobs (i.e., earning less than £7 per hour) was 10% higher than nondisabled employees (Palmer, 2006).

Disabled women and Intersectional discrimination

Although both disabled men and women are subject to discrimination based on their disability, the relationship between economic marginalization and disability is likely intensified for women (Barile, 2001; Haveman et. al., 2000), although recent empirical research on this issue is scant. Disabled women are less likely to receive the health and rehabilitative care they need to remain economically or socially independent, and they face reduced access to education, employment and social inclusion compared to disabled men (Leonard Cheshire Disability, 2014). They are also less likely to marry, which in turn gives them less access to the resources of a spouse (Clarke & McKay, 2014). In the UK, disabled men experienced a pay gap of 11% compared to non-disabled men. The pay gap for disabled women, however, was 22% (Longhi & Platt, 2008).

The stereotypes that accompany both disability and gender frequently result in disabled women being seen as particularly dependent and amplify the misconception of this population as inferior (Coleridge, 1993). Feminist disability scholars contend that disabled women and disabled men have different life experiences due to biological, psychological, economic, social, political and cultural attributes associated with being female and male (Garland-Thomson, 2001; 2002). Traditional disability theories have neglected to explain the gendered nature of discrimination against disabled women and overlooked the combined effects of gender and disability

discrimination experienced by disabled women (Mays, 2006). Feminist disability studies brought these issues together in analyses demonstrating how gender and disability interact on multiple levels and contribute to systematic patterns of discrimination against disabled women (Garland-Thomson, 2001; Morris, 1999; Sheldon, 2004). In her book, 'Pride against Prejudice' (1999), Morris argued that issues relevant to disabled women have been excluded from both disability and feminist movements, and if any attention was paid, disabled women were only tagged as a special interest or an optional extra. Morris argued that like women, disabled people's politicization has its roots in the assertion that 'the personal is political', and personal experiences of being denied opportunities should be explained in relation to social, environmental and attitudinal barriers, and not by bodily limitations (i.e. impairments and sex). Thomas (1999) argued that "Human bodies possess a materiality which exists in a relationship of dynamic interaction with its social and physical environment (p. 9)", and that *disablism* (i.e. "a form of social oppression involving the social imposition of restrictions of activity on people with impairments and the socially engendered undermining of their psycho-emotional well-being" (Thomas, 2007; p.73)) intersects with *sexism* to generate intricate webs of disadvantage and exclusion. She also warned against bracketing disabled women or men into undifferentiated or fixed social groupings (Thomas, 2007).

The interaction of gender and disability may sometimes intensify or amplify the impacts of disability and/or in some way change the impacts (Dutta, 2015; Skinner and MacGill, 2015). Feminist disability scholars argue that social forces and contexts

that give shape to gender and disability are closely intertwined, and the impact of disability is inextricably refracted in some way through sexism. Intersectionality holds that different forms of oppression (i.e. racism, sexism, disability) overlap, intertwine, and are dependent from one another. As a result, the consequences of disability and gender should not be studied separately but must be examined by looking at how disability and gender interrelate and affect disabled women (Dutta, 2015).

Feminist disability writers such as Meekosha (1990), Neath (1997) and Howe (2000) pointed out that disabled women are at an even greater risk of economic hardship compared to disabled men and nondisabled people, given the social, historical and economic based marginalization and oppression towards disabled women.

However, the existing research suggesting economically poor outcomes for disabled women lacks a robust empirical base in the UK. Exploring whether there is an empirical basis for assertions that disability and gender interact in the lives of disabled women, and indeed lead to further discrimination, will also aid our understanding of what happens when identities intersect. As such, the proposed study was conducted to determine how disabled women in the UK experience "intersectional discrimination" compared to disabled men and nondisabled men and women.

Method

Data

Data for this study were drawn from the Life Opportunities Survey (LOS). The LOS is the first large-scale longitudinal panel survey of disability in the UK to compare the experiences of disabled and nondisabled people across a range of topics (Cuddeford, Glen & Bulman, 2010). Since a key purpose of the LOS was to compare how disabled and nondisabled people participate in society, it was designed to include people with a range of impairments. British Sign Language interpreters and Braille cards were available for respondents with hearing and vision disabilities, respectively. Furthermore, in-depth interviews and ethnography were used to ensure individuals with severe learning, memory, and neuro-diversity impairments were included in the survey (Office for National Statistics, 2010).

Using multi-stage random-stratified clustered design, the LOS was designed to represent the national population. The LOS is a longitudinal panel survey and respondents were interviewed 3 times between June 2009 and September 2014. The LOS interviewed a total of 31,161 adults aged 16 and over who lived in 37,500 households from June 2009 to March 2011 (wave 1). Respondents were subsequently followed up approximately 1 year after their initial interviews (wave 2: June 2010 to March 2012), and then interviewed again approximately 2 and a half years later (wave 3: October 2012 to September 2014). Out of the total of 31,161 respondents at wave 1, approximately 24,000 (77%) and 17,000 (54%) completed the survey at wave 2 and wave 3, respectively. Post-stratification weights were applied to treat for possible attrition biases, which adjust attritions by assuming that dropouts occur randomly

within weighting classes defined by observed variables that are associated with dropouts (Henderson et al., 2010).

Sample

The sample for this study were adults aged 16 and over residing in the UK. In this study, the sample was stratified into four groups: disabled women, disabled men, nondisabled women and nondisabled men. A total of 4,552 (27%) respondents from wave 3 did not respond to the disability question and thus was first removed. To compare the trajectories of disabled and nondisabled men and women's economic well-being across three waves, the present study focused on individuals who reported identical disability and gender statuses in all waves. Hence, for example, respondents who reported to be nondisabled in wave 1 but disabled in wave 2 and/or wave 3 were excluded. Based on these criteria, a total of 6,159 individuals (n=839 disabled women, n=594 disabled men, n=2,304 nondisabled women, and n=2,422 nondisabled men) were examined.

A total of 6,187 respondents from wave 3 changed their disability status. Working aged (16-64) individuals were more likely to report disability offset (i.e. disabled but changed to nondisabled) than adults aged 65 and over, whereas adults aged 65 and over were more likely to report acquiring disability in later waves. Respondents with long-term pain had both high number of disability offset and acquire changes. Also, a total of 1,190 (20%) individuals changed their disability status twice during the three waves. Our results correspond to the LOS report of disability status changes (see Office for National Statistics, 2014 and 2015 for further

details).

The demographic characteristics of the sample are presented in Table 1. The statistics are an average of three waves. Disabled women (45%) were less likely to be married than disabled men (56%), nondisabled men (57%) and women (60%). Also, disabled women (15%) were less likely to have a dependent child(ren) than nondisabled men (29%) and women (36%), but they were slightly more likely to have a dependent child(ren) than disabled men (13%). Disabled women (22%) were least likely to be employed among the four groups: disabled men (23%), nondisabled men (73%) and nondisabled women (64%). Furthermore, results indicated that fewer disabled women (39%) had an A-level or higher education degree than disabled men (43%), nondisabled men (62%) and women (61%). The average age of disabled women (62) was higher than both disabled men (59) and nondisabled men (48) and women (48). Lastly, disabled women (2.0), on average, had fewer household members than disabled men (2.2), and nondisabled men (2.8) and women (2.8).

<<INSERT TABLE 1 ABOUT HERE>>

Measures

Independent variables*:* The independent variable for this study was whether or not the respondent was disabled. Respondents were defined as disabled if they indicated having moderate, severe or complete difficulties (5-point scale: no difficulty; mild; moderate; severe; complete) within at least one area of physical or mental functioning, and their activities were limited as a result. ‘Activities’ refer to different areas of physical or mental functioning, such as walking, conversing with

others or reading a newspaper even with aiding or special equipment (i.e., hearing aids or glasses). The present study thus used the LOS definition of disability and did not construct this variable. This definition of disability is in line with the social model, which views disability as the disadvantage or restriction of activity and participation caused by social exclusion.

Dependent variables: Economic well-being was examined using both a traditional pre-tax household income measure and respondents' subjective assessments of their material hardship. Respondents' subjective determination of their economic conditions is used to complement traditional income measures. This approach is taken because income measures often overlook the variation in the costs of basic necessities (Gallie & Paugan, 2002; Citro & Michael, 1995). For example, a person may have high household income but may have severe financial debts and experience difficulties making ends meet. Thus, this study analyzed both income and economic hardship variables to examine economic well-being across multiple dimensions. The LOS included the following subjective material hardship assessments: financial loan payments (yes vs. no), severity of financial loan payments (heavy vs. slight or not a burden), difficulties making ends meet (great or some difficulties vs. fairly or very easily), and able to afford to pay an unexpected but necessary expense of at least £500 (yes vs. no). These items were validated in a previous UK study that examined the link between deaf and hard of hearing people and their economic security (McManus& Lord, 2012). In the present study, weekly pre-tax household income was measured as a continuous variable.

Control variables: The present study also controlled for several sociodemographic characteristics, including marital status (married or other) and having one or more dependent children (yes or no). Educational attainment was coded as a seven-category, mutually exclusive ordinal variable (see Table 1 for detailed categorization). Age and household size were coded as continuous variables. Finally, employment was coded as employed or unemployed based on the International Labour Organization definition of employment.

Analytic Strategy

For multivariate analyses, hierarchical linear and hierarchical liner logistic models were used to examine the trajectories of respondents' household income and other economic well-being outcomes. If we were to run a pooled ordinary least square regression model with year dummies, the results would be bias because of repeated measures and unobserved heterogeneity. The hierarchical linear (and logistic) models allow us to control for these biases (Dmitrienko et al., 2007; Menard, 2009). The hierarchical linear (and logistic) models enable researchers to estimate individual development curves across time but also how factors (i.e. disability and gender) influence these developments (Snijners, 2005).

In our study, due to the highly skewed distribution of income and its residuals, household income was modeled with log-transformed data. As such, when interpreting the coefficient estimates obtained from this model, the coefficients multiplied by 100, are interpreted as the percentage change in household income for disabled women compared to disabled men, nondisabled men and women after

controlling for other demographic characteristics. Logistic models were estimated for other dependent economic well-being variables, which were presented as odds ratios and 95% confidence intervals, for ease of interpretation.

Influential points were examined and removed. Influential points are observations that are both outliers and have high leverage, which significantly affect the association of variables (UCLA Institute for Digital Research and Education, 2015). In this study, influential points were examined using Pregibon's Delta-Beta influential statistic for logistic models and Cook's-D statistic for household income model (Mendenhall & Sincich, 1996; Sarkar, Midi, & Rana, 2011). For the linear model of household income, 190 (1.2%) influential points were identified and removed. Influential points in the logistic models were removed as follows: financial loan payments, 604 (3.3%); severity of financial loan payments, 24(0.3%); difficulties in making ends meet, 275(1.5%); and affordability to pay an unexpected but necessary expense of at least £500, 489 (2.6%). Multiple imputation was used to treat for the removed influential points.

Results

Table 2 presents the descriptive analysis of the economic well-being of disabled and nondisabled men and women across three waves. Results showed that disabled women had the lowest weekly pre-tax household income and were most likely to report their financial loan payments as heavy among the four groups in all three waves. On the other hand, disabled men were most likely to report difficulties making ends meet and were least likely to be able to afford to pay an unexpected but

necessary expense of £500 in all three waves. Additionally, results revealed that nondisabled men and women were more likely to report having financial loan payments than disabled men and women in all three waves.

In terms of trajectory, results indicated that disabled women's economic well-being improved between 2009 and 2014. Disabled women were less likely to live in households that had a financial loan (39% vs. 32%) and perceive their loan payments as heavy burdens (29% vs. 27%) at wave 3 than at wave 1. Also, disabled women were more able to afford to pay for an unexpected but necessary expense of £500 or more (62% vs. 64%) at wave 3 than at wave 1. Further, disabled women's weekly pre-tax household income increased by approximately 7% between wave 3 and wave 1 (£405 vs. £433). Similar patterns were also observed among disabled men, and nondisabled men and women. Results indicated that disabled men, nondisabled men and women's economic well-being also improved between 2009-2014, except for making ends meet.

Between 2009 and 2014, disabled men experienced the greatest percentage drop in terms of financial loan payments (approximately 20% decrease) among the four groups. Also, they were the only group who didn't report that making ends meet had become more difficult at wave 3 than at wave 1. Nondisabled women reported the greatest drop in terms of perceiving heavy financial loan payments between wave 1 and wave 3 (approximately 26% decrease). Lastly, in terms of household income, nondisabled men's income increased the most between wave 1 and wave 3 among the

four groups (12%): disabled women (7%), disabled men (7%), nondisabled women (10%)

<< INSERT TABLE 2 ABOUT HERE>>

Hierarchical linear model: Weekly pre-tax logged household income

Although not shown here, the null model was first examined to investigate if there was significant variation between individuals. Results indicated that household income varied significantly between individuals ($p<.001$). Interclass correlation showed that 75% of the variability in household income was due to differences across individuals, while the remainder (25%) was attributable to income differences across waves.

Table 3 presents the final hierarchical linear model for weekly pre-tax household income as a function of disability and gender after controlling for other demographic characteristics. A hypothesis test and VIF were conducted to test for model specification and fitness. As noted above, in this model, weekly pre-tax household income was log transformed. First, results showed that nondisabled women had 29% ($p<.001$) and nondisabled men had 27% ($p<.001$) higher weekly household income than disabled women at wave 1 after controlling for other demographic covariates. Second, disabled women's household income increased approximately 8% between wave 1 and wave 3 ($p<.001$). Third, however, the 8% rate change was not significantly different compared to changes experienced by disabled men (12% increase), nondisabled women (3% increase) and nondisabled men (6% increase) at the same time.

<< INSERT TABLE 3 ABOUT HERE>>

Hierarchical linear logistic models: material hardship

Null models were also tested to examine the variance between individuals. Results showed that whether one had financial loan payments varied significantly from individual to individual (p<.001). The interclass correlation indicated that 32% of the variance resided between individuals and the remaining 68% was attributable to differences across waves. Similarly, results indicated that there were significant variances between individuals in terms of perceiving their loan payments as heavy burdens (p<.05) and interclass correlation results showed that individual differences accounted for 32% of the total variance. In terms of making ends meet, significant variances existed between individuals (p<.001) and the interclass correlation was 40%. Lastly, results showed that there were significant variances between individuals in terms of affordability to pay an unexpected but necessary expense of at least £500, and interclass correlation showed that 44% of the total variance was attributed to individual differences.

Tables 4 presents the final logistic hierarchical linear model results after controlling for the covariates. Hypothesis tests and VIF were conducted to test for model specification and fitness.

First, results indicated that nondisabled women (OR=0.75, p<.01) and men (OR=0.66, p<.01) were significantly less likely to have financial loan payments than disabled women at wave 1. In terms of longitudinal trajectory, disabled women were significantly less likely to have financial loan payments at wave 2 (OR=0.77, p<.01)

and at wave 3 (OR=0.59, p<.01) than at wave 1. However, the rate change at wave 2 was not significantly different to rate changes of disabled men, nondisabled men and women. On the other hand, there were significant rate change differences among groups at wave 3. Disabled women (OR=0.59) had a significantly greater odd ratio decrease at wave 3 than nondisabled women (OR=0.86 (0.59×1.46), p<.01) and nondisabled men (OR=0.80 (0.59×1.35), p<.01).

Second, among those who had financial loan payments, disabled women were significantly more likely to report heavy financial payments than nondisabled women (OR=0.29, p<.001) and nondisabled men (OR=0.31, p<.001) at wave 1. In terms of longitudinal trajectory, results revealed that disabled women were less likely to report heavy financial loan payments at wave 2 (OR=0.81) and at wave 3 (OR=0.88) than at wave 1; however, the differences were not statistically significant. Also, there were no significant differences among groups in terms of rate changes at wave 2 and at wave 3.

Third, disabled women were significantly more likely to report difficulties in making ends meet than nondisabled women (OR=0.25, p<.001) and nondisabled men (OR=0.25, p<.001) at wave 1. Results indicated that disabled women's report on making ends meet did not change significantly over time, nor were there significant differences among groups in terms of rate changes.

Lastly, disabled women were significantly less likely to be able to afford to pay an unexpected but necessary expense of £500 or more than nondisabled women (OR=4.56, p<.001) and nondisabled men (OR=4.52, p<.001) at wave 1. Over time,

disabled women were significantly more likely to be able to afford to pay £500 or more at wave 3 than at wave 1 (OR=1.22, $p<.05$). However, there were no significant differences among groups in terms of rate changes.

<< INSERT TABLE 4 ABOUT HERE>>

Discussion

This study compared the material well-being of disabled and nondisabled men and women in the UK, using a large, nationally-representative sample from 2009-14. Results revealed that disabled women's economic well-being improved significantly between 2009 and 2014 even after controlling for other demographic covariates in the following three areas: household income, financial loan payments, and affordability to pay an unexpected but necessary expense of £500 or more. Yet, despite these improvements, results showed the rate of change was not significant enough to narrow the gap between disabled women and the other groups. Disabled women remained significantly worse off than nondisabled men and women in 2014 as they were in 2009 in all economic outcomes except for financial loan payments. Also, disabled women were economically worse off than disabled men in terms of financial loan payments and the severity of their loan payments in 2014 and 2009; however, the differences were not significant.

Limitations

Before discussing the study's implications, it is important to consider its limitations. First, this study relies on self-reported information from respondents. As with all research that does not corroborate information from independent sources,

these self-reported data are subject to both recall and social desirability biases. Second, the study examined disabled and nondisabled men and women's economic well-being between 2009-2014. This is relatively short-term. Further studies are needed to examine the long-term trajectories of disabled and nondisabled men and women's economic well-being. Yet, significant disability policy related changes occurred between 2009-2014, such as the 2012 Welfare Reform Act, and we believe the present study provides important insight into understanding changes in this pivotal period. Finally, the purpose of this study was to examine the impact of gender and disability on the economic well-being of disabled women. Factors such as age and education may also interact with disability and gender and produce significant impacts; however, it is beyond the scope of this paper and we will leave it to future researches to examine the intersections of disability, gender and other demographic factors on economic well-being.

Despite these limitations, this study has notable strengths. It employs a large, nationally-representative sample of men and women in the UK, and accommodations were provided to enable the disabled population to participate in the survey. Second, several measures of financial well-being, including the traditional income measure and subjective material hardship measures provided a multidimensional assessment of economic well-being. Third, this study is the first to empirically examine the intersection of discrimination against disabled women in the UK and what the impacts are using the LOS data. Although the discourse on intersecting discrimination is not new, the field lacks systematic empirical investigations of the relationship between

the intersection of disability and gender on the well-being of disabled women in the UK. The study investigated the association between gender, disability and economic well-being, and explored whether and to what extent disabled women experience additional economic difficulty compared to disabled men and nondisabled men and women. Lastly, the study is also the first longitudinal study in the UK to examine and compare the trajectories of disabled women, disabled men, nondisabled men and women's economic well-being over time.

Policy Implications

First, our results indicate that the disabled population, regardless of their gender, had markedly worse economic well-being compared to the nondisabled population in the UK. Consistent in all three waves, disabled people were significantly worse off than nondisabled people in all economic outcomes. The magnitude of these disability disparities is striking, particularly in light of the range of benefits that are available to disabled adults in the UK. As noted above, at the time the LOS data were collected, disabled adults could receive a Disability Living Allowance (Personal Independence Payment after 2012), an Attendance Allowance, and Employment and Support Allowance. These benefits provided direct income transfers and support for personal attendants or care workers. Since these benefits were counted in household income and analyzed here, the findings of the present study indicate that disability benefit systems in the UK were not sufficient to reduce the economic hardship of disabled people. Furthermore, recent UK policymakers' proposal to cut disability benefits contravenes our research findings (Kennedy, 2015). Cutting

disability benefits will likely exacerbate the economic hardship experienced by disabled people and will also result in considerable long-term financial costs to the government. One report found that 65% of working respondents reported that without disability benefits to support disability costs such as the Disability Living Allowance or – in the current context – the Personal Independence Payment, they would not be able to work and 30% of respondents reported that their carers would not be able to work without these benefits (Kaye, Jordan & Baker, 2012). Hence, disability benefit cuts will likely result in increased unemployment among disabled people and subsequently lead to increased poverty and hardship of this population. Within the disabled population, disabled women, whose economic well-being is most precarious, are particularly more likely to be affected by disability benefit cuts.

Second, the study discovered that the disparities between disabled women and disabled men were smaller than the disparities between disabled women and nondisabled women, indicating that disability played a more negative impact than gender on disabled women in the UK. Multivariate results showed that disabled women were overall worse off than both disabled men and nondisabled women; however, the difference between disabled women and disabled men was not significant, whereas, it was significant between disabled women and nondisabled women. These findings provide potentially important information to policymakers interested in protecting the well-being of disabled women and provide empirical evidence to support policies that better address the needs and economic security of disabled women.

Third, our multivariate results indicated that disabled women were overall more economically marginalized than disabled men and nondisabled men and women. Further, our demographic descriptive analysis also showed that disabled women were least likely to be employed, married and had the lowest education attainment among the groups. However, neither disability policies nor gender policies in the UK address the intersecting discrimination experienced by disabled women. In the UK, gender policies tend to ignore the needs of disabled women and disability policies tend to have a gender-blind approach. We suggest that policies should adopt a more intersectional approach, which understands the elevated marginalization experienced by disabled women, and which accrues because of both gender and disability. Policies should aim to increase access and opportunities for disabled women to improve their economic autonomy. The links between poverty, disability, and gender must be considered in the UK policies.

Lastly, our multivariate results indicated that disabled women's economic well-being improved between 2009-14 even after controlling for other demographic factors in aspects such as household income, financial loan payments, and affordability to pay an unexpected but necessary expense of £500 or more. Although these are noticeable achievements, it is important to consider that factors such as inflation may have played part. Annual inflation during the 2009-2014 period ranged from 1.5% to 4.5% over that period and the average inflation rate was 2.8% (RateInflation, 2018). Notably, there were no significant changes in disabled women's perception of difficulties making ends meet and severity of their financial loan

payments. Further, disabled women's rate of change between 2009-2014 compared to other groups was also not significantly different. Disparities between the groups remained more or less similar. Further, our descriptive results (see Table 2) showed that disabled women's household income increased approximately 6.8% between 2009 and 2014, however, it was the lowest among the 4 groups: disabled men (7.1%) nondisabled women (9.6%), and nondisabled men (12.4%). Hence, in longitudinal studies or in government assessments, it is important to not only examine the changes of target population but also comparison populations to avoid time-based biases.

Conclusion

The study examined the economic well-being of disabled and nondisabled men and women on multiple dimensions, using a nationally-representative sample from the 2009-14 Life Opportunities Survey. The study is the first longitudinal study to empirically compare the economic well-being of disabled women in contrast to disabled men and nondisabled men and women. The study contributes to understanding (1) the longitudinal changes of disabled women's economic well-being between 2009 and 2014; and (2) whether and to what extent intersectional discrimination against women exists in the UK compared to disabled men and nondisabled men and women. The study indicates that disabled women's economic well-being improved between 2009 and 2014; however, the improvements were not significant to narrow the disparities between disabled women and other groups. Disabled women remained economically worse off than both disabled men, nondisabled men and women in 2014 as they were in 2009. And the disparities

between disabled women and nondisabled men and women were, in particular, substantial.

Intersectional discrimination against disabled women is a common recurring issue worldwide. The World Health Organization (WHO) estimates that more than 1 billion people worldwide (15% of the world's population) have a disability and more than half are women (WHO, 2011). Over 200 million disabled women live below the poverty line (WHO, 2011). The UN Convention on the Rights of Persons with Disabilities (CRPD) recognizes that disabled women and girls are subject to multiple discriminations and demonstrates a commitment to gender equality by devoting a specific article to addressing issues specific to disabled women and girls (Article 6). However, the CRPD is unique in recognizing disabled women as a distinct group. While disabled women and girls are included, in principle, in all human rights agreements, in reality, they are rarely referenced specifically and are often overlooked in mainstream discourse. We consider that similar analyses in other countries (where there is available data) would be invaluable, as similar processes of intersectional discrimination and disadvantage are likely to be found and need to be addressed. Further, the CRPD's 'Concluding observations on initial report of the United Kingdom of Great Britain and Northern Ireland" (United Nations, 2017) raised concerns about the "lack of measures and available data concerning the impact of multiple and intersectional discrimination against women and girls with disabilities." This paper contributes to this international debate and adds impetus for further work and data collection in this field, especially given the loss of LOS after wave 3.

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Table 1. *Description of the sample (Three wave average)*

	Disabled women (*n*=839)	Disabled men (*n*=594)	Nondisabled women (*n*=2,304)	Nondisabled men (*n*=2,422)
Have dependent child(ren)	14.7%	13.3%	35.8%	29.0%
Employed	21.5%	23.3%	63.6%	72.9
Married	44.6%	55.7%	59.6%	57.4%
Education				
Degree level qualification	12.8%	10.5%	28.1%	28.8%
Higher education below degree level	21.4%	27.6%	20.6%	22.0%
A levels/Highers	4.5%	4.7%	12.3%	11.5%
ONC /National BTEC	3.3%	5.2%	4.3%	7.5%
O Level /GCSE (Grade A-C)/CSE Grade 1	15.7%	14.0%	20.5%	15.4%
GCSE (Grade D-G) / CSE Grade 2-5/Standard Grade 4-6	4.8%	4.7%	4.4%	3.9%
No formal qualifications	37.4%	33.3%	9.9%	11.0%
	Mean (SD)	*Mean (SD)*	*Mean (SD)*	*Mean (SD)*
Age	62.1 (14.3)	59.2 (15.3)	48.4 (16.6)	47.5 (17.3)
Household Size	2.0 (1.3)	2.2 (1.4)	2.8 (1.3)	2.8 (1.2)

Notes: Values are weighted.

Table 2. *Comparison of disabled and nondisabled men and women' economic well-being across three waves*

Variables	Wave1	Wave2	Wave3
Disabled Women (n=839)			
Have financial loan payment	39.1%	34.5%	31.5%
Have heavy financial loan payment [a]	29.2%	26.7%	27.0%
Have difficulties making ends meet	40.8%	41.6%	41.8%
Afford to pay for expenses of £500 or more	62.3%	63.5%	63.8%
Weekly pre-tax household income (£) [b]	405.3 (333.6)	427.8 (374.5)	433.2 (367.6)
Disabled Men (n=594)			
Have financial loan payment	42.4%	39.5%	34.1%
Have heavy financial loan payment [a]	26.8%	26.9%	22.9%
Have difficulties making ends meet	44.0%	44.5%	44.0%
Afford to pay for expenses of £500 or more	62.2%	60.9%	62.0%
Weekly pre-tax household income (£) [b]	436.2 (371.2)	451.3 (407.0)	467.0 (381.5)
Nondisabled Women (n=2,304)			
Have financial loan payment	51.5%	49.3%	47.2%
Have heavy financial loan payment [a]	12.9%	13.1%	9.5%
Have difficulties making ends meet	23.5%	25.7%	23.6%
Afford to pay for expenses of £500 or more	80.7%	80.8%	82.0%
Weekly pre-tax household income (£) [b]	785.7 (534.4)	831.8 (600.7)	861.8 (616.2)
Nondisabled Men (n=2,422)			
Have financial loan payment	50.2%	47.9%	44.9%
Have heavy financial loan payment [a]	13.0%	11.6%	9.7%
Have difficulties making ends meet	21.2%	24.3%	21.3%
Afford to pay for expenses of £500 or more	82.3%	80.1%	83.1%
Weekly pre-tax household income (£) [b]	823.7 (543.3)	877.6 (590.7)	926.4 (654.0)

Notes: Values are weighted. [a] Respondents who reported they have financial loan payments were asked how severe (heavy vs minimum + not at all burden) their loan payments were. [b] Standard deviation in parentheses.

Table 3. *Hierarchical linear regression result: comparison of disabled and nondisabled men and women's trajectory of logged weekly pre-tax household income*

Variables	Coefficients (SD)
Fixed effects	
Intercept at Wave 1	
Intercept (*ref: disabled women*)	5.70*** (0.03)
Disabled men	-0.06 (0.03)
Nondisabled women	0.29*** (0.03)
Nondisabled men	0.27*** (0.04)
Wave 2 slope	
Intercept	0.03 (0.02)
Disabled men	0.01 (0.03)
Nondisabled women	-0.01 (0.02)
Nondisabled men	0.02 (0.02)
Wave 3 slope	
Intercept	0.08*** (0.02)
Disabled men	0.04 (0.03)
Nondisabled women	-0.05 (0.03)
Nondisabled men	-0.02 (0.03)
Age (grand-centered)	-0.01 ($9.96e^{-4}$)
Household size (grand-centered)	0.19*** (0.01)
Educational attainment (grand-centered)	-0.05*** (0.01)
Dependent child(ren)	-0.31*** (0.03)
Married	0.32*** (0.02)
Employed	0.45*** (0.03)
Random effects [a]	
Variance components	
Level l Residual variance (σ^2)	0.13 (0.36)
Level 2 Intercept (τ_{00})	0.27 (0.52)
Level 2 Wave 2 Slope (τ_{11})	0.12 (0.35)

Notes: [a] Hypothesis test results indicated that the model was more robust to have slope wave1 as a fixed effect.

*p < .05. ** p < .01. ***p < .001

Table 4. *Hierarchical linear logistic regression results: comparisons of disabled and nondisabled men and women's trajectory of economic hardship*

Variables	Financial Loan Payment	Heavy Financial Loan Payment [a]	Difficult in Making Ends Meet	Afford to Pay for Expenses of £500 or more
Fixed effects				
Intercept at Wave 1				
Intercept (*ref: disabled women*)	0.64 (0.53, 0.78)***	0.46 (0.33, 0.63)***	1.02 (0.82, 1.27)	1.10 (0.88, 1.39)
Disabled men	0.88 (0.69, 1.12)	0.92 (0.64, 1.33)	1.05 (0.80, 1.38)	1.04 (0.79, 1.38)
Nondisabled women	0.75 (0.58, 0.91)**	0.29 (0.21, 0.42)***	0.25 (0.19, 0.32)***	4.56 (3.47, 5.99)***
Nondisabled men	0.66 (0.52, 0.84)**	0.31 (0.21, 0.45)***	0.24 (0.18, 0.31)***	4.52 (3.40, 6.02)***
Wave 2 slope				
Intercept	0.77 (0.64, 0.92)**	0.81 (0.61, 1.07)	1.11 (0.93, 1.33)	1.05 (0.86, 1.28)
Disabled men	1.26 (0.95, 1.66)	1.23 (0.80, 1.90)	1.06 (0.81, 1.41)	0.79 (0.60, 1.06)
Nondisabled women	1.22 (9.95, 1.55)	1.32 (0.87, 2.01)	1.09 (0.84, 1.42)	0.92 (0.68, 1.24)
Nondisabled men	1.18 (0.92, 1.50)	1.11 (0.72, 1.70)	1.18 (0.84, 1.67)	0.73 (0.50, 1.07)
Wave 3 slope				
Intercept	0.59 (0.49, 0.70)***	0.88 (0.64, 1.21)	0.95 (0.77, 1.16)	1.22 (1.01, 1.49)*
Disabled men	1.18 (0.90, 1.54)	0.88 (0.54, 1.40)	1.12 (0.82, 1.52)	0.80 (0.60, 1.07)
Nondisabled women	1.46 (1.14, 1.87)**	0.84 (0.51, 1.38)	1.26 (0.94, 1.71)	0.75 (0.56, 1.03)
Nondisabled men	1.35 (1.04, 1.76)*	0.86 (0.53, 1.39)	1.20 (0.85, 1.69)	0.75 (0.51, 1.10)
Age (grand-centered)	0.98 (0.98, 0.99)***	0.98 (0.98, 0.99)**	0.98 (0.97, 0.98)***	1.04 (1.03, 1.05)***
Household size (grand-centered)	1.08 (1.00, 1.17)	1.13 (1.01, 1.27)*	1.14 (1.04, 1.24)**	1.06 (0.96, 1.17)
Educational attainment (grand-centered)	0.97 (0.94, 1.00)*	1.14 (1.08, 1.20)***	1.19 (1.13, 1.25)***	0.82 (0.77, 0.86)***
Dependent child(ren)	1.15 (0.95, 1.34)	1.57 (1.19, 2.07)**	2.40 (1.93, 2.99)***	0.30 (0.23, 0.38)***
Married	1.34 (1.12, 1.16)**	0.62 (0.48, 0.79)***	0.46 (0.38, 0.55)***	2.72 (2.23, 3.30)***
Employed	1.88 (1.63, 2.18)***	1.14 (1.08, 1.20)**	0.70 (0.58, 0.83)***	1.88 (1.57, 2.26)***

Random effects [b]				
Level 2 Intercept (τ_{00})				
Variance component (SD)	1.32 (1.15)	1.33 (1.15)	1.69 (1.30)	2.04 (1.43)

Note: Odd ratios with 95% Confidence Interval in parentheses. [a] Respondents who reported they have financial loan payments were asked how severe (heavy vs minimum + not at all burden) their loan payments were. *"Heavy"* coded as 1 and *"minimum + not at all burden"* coded as 0. [b] Hypothesis test results indicated that the models were more robust to have slope wave1 and wave2 as fixed effects.

*p < .05. ** p < .01. ***p < .001